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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
EL HADY, NABIL M	

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/931,045	Applicant(s) GAUDET, BRIAN
	Examiner Nabil M El-Hady	Art Unit 2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-31 are pending in this application.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5-7, 15-17, and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Oskouy et al. (US 2002/003795), hereafter "Oskouy".

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

4. As to claim 1, Oskouy discloses the invention as claimed including a system for removing gaps from streams of packets, comprising: a packet splitter configured to receive the packets, each of the packets including a packet header and packet data, and separate the packet header from the packet data for each of the packets ([0060]; and [0062]), a header buffer configured to store the packet headers (390, Fig. 3c); a data buffer configured to store the packet data (388, Fig. 3c); and a packet combiner configured to reassemble the packets from

the packet headers in the header buffer and the packet data in the data buffer (392, Fig. 3c), and remove gaps from the reassembled packets ([0048], [0049]; and [0052]).

5. As to claim 16, the claim is rejected for the same reasons as claim 1 above. In addition, Oskouy discloses a system for removing gaps from streams of packets, comprising: means for receiving the packets (300, Fig. 3a), each of the packets including a packet header and packet data; means for separating the packet header from the packet data for each of the packets ([0060]; and [0062]); means for separately storing the packet headers and the packet data(390, 388, Fig. 3c); means for reassembling the packets using the stored packet headers and the stored packet data (392, Fig. 3c); and means for removing gaps from the reassembled packets ([0048], [0049]; and [0052]).

6. As to claim 17, the claim is rejected for the same reasons as claims 1 and 16 above. In addition, Oskouy discloses a method for removing gaps from streams of packets, comprising: obtaining the packets (300, Fig. 3a), each of the packets including a packet header and packet data; separating the packet header from the packet data for each of the packets ([0060]; and [0062]); separately storing the packet headers and the packet data ([0060]; and [0062]); reassembling the packets using the stored packet headers and the stored packet data (392, Fig. 3c); and removing gaps from the reassembled packets ([0048], [0049]; and [0052]).

7. As to claims 6, 7, 20, and 21, Oskouy discloses a memory configured to store the reassembled packets based on write stream identifiers from a stream map ([0097]), and output the reassembled packets based on read stream identifiers from the stream map ([0099]). Oskouy discloses a buffer that includes a plurality of blocks corresponding to the streams 380,

Fig. 3c), a write pointer register configured to store a plurality of the write stream identifiers, and a read pointer register configured to store a plurality of the read stream identifiers ([0063]; [0097]; and [0099]).

8. As to claims 5, 15, and 19, Oskouy discloses a stream map configured to output stream identifiers corresponding to the streams ([0062]; and [0088]), and handshake logic configured to read the packet headers from the header buffer and the packet data from the data buffer based on the stream identifiers, and reassemble the packets using the packet headers and the packet data (Figs 3c and 3d).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-3, 16, 17, and 24 are rejected under 35 U.S.C. 103(a) as being obvious over Hussey et al. (US 2001/0049744), hereafter "Hussey" in view of Gaytan et al. (US 5,638,367), hereafter "Gaytan".

11. As to claim 1, Hussey discloses the invention substantially as claimed including a packet splitter configured to receive the packets, each of the packets including a packet header and packet data, and separate the packet header from the packet data for each of the packets ([0011]), a header buffer configured to store the packet headers ([0011]); a data buffer configured to store the packet data ([0011]); and a packet combiner configured to reassemble

the packets from the packet headers in the header buffer and the packet data in the data buffer ([0011]), (see also [0031]).

12. Hussey does not disclose removing gaps from the stream of packets. Gaytan, on the other hand, discloses removing gaps from the stream of packets (data packing, col. 1, line 64 to col. 2, line 5). It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Hussey and Gaytan because Gaytan data packing circuitry would optimize the performance of Hussey's system by transmitting data in continuous stream of data bytes (see, for example, Gaytan, col. 1, lines 30-38).

13. As to claim 2, Hussey discloses the packet splitter is further configured to identify a number of bytes of packet data stored in the data buffer, and provide the identified number of bytes to the header buffer ([0013]).

14. As to claim 3, Hussey discloses the streams include packet streams of different bandwidths ([0048]).

15. As to claim 16, the claim is rejected for the same reasons as claim 1 above.

16. As to claim 17, the claim is rejected for the same reasons as claims 1 and 16 above.

17. As to claim 24, Gaytan discloses byte-packing process to create gap-free packets (data packing, col. 1, line 64 to col. 2, line 5) .

18. Claims 5-7, 15, and 19-21 are rejected under 35 U.S.C. 103(a) as being obvious over Hussey et al. (US 2001/0049744), hereafter "Hussey" in view of Gaytan et al. (US 5,638,367), hereafter "Gaytan" as applied to claims 1-3, 16, 17, and 24 above and further in view of Muller et al. (US 6,480,489), hereafter "Muller".

19. As to claims 5, 15, and 19, Hussey allocates pool of processors for each of a plurality of packet streams ([0048]) and keeps track of processor identifier ([0033]) as stream identifier, and read the packet headers from the header buffer and the packet data from the data buffer based on the stream identifiers, and reassemble the packets using the packet headers and the packet data ([0031]; and [0046]. Muller, however, discloses the concept of using a stream identifier (flow key, col. 4, lines 13-22). It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Hussey and Muller because Muller's use of stream identifier would avoid the task of allocating pools of processors to each stream, thus freeing all processors to be all available for all data streams.

20. As to claims 6, 7, 20, and 21, Hussey discloses a memory configured to store the reassembled packets based on write stream identifiers from a stream map, and output the reassembled packets based on read stream identifiers from the stream map (240, Figs. 2 and 3). Hussey discloses a buffer that includes a plurality of blocks corresponding to the streams ([0030]). Muller also discloses a memory configured to store the reassembled packets based on write stream identifiers from a stream map, and output the reassembled packets based on read stream identifiers from the stream map (col. 4, lines 47-48).

21. Claims 4, 8-14, 18, and 25, 26, 28, 29 are rejected under 35 U.S.C. 103(a) as being obvious over Hussey et al. (US 2001/0049744), hereafter "Hussey" in view of Gaytan et al. (US 5,638,367), hereafter "Gaytan" as applied to claims 1-3, 16, 17, and 24 above and further in view of Leatherbury et al. (US 6,763,025), hereafter "Leatherbury".

22. As to claims 4 and 8, Gaytan discloses byte-packing process to create gap-free packets (data packing, col. 1, line 64 to col. 2, line 5). Hussey and Gaytan, however, do not disclose multiplexing the data streams. Leatherbury, however, discloses multiplexing the data streams (col. 2, lines 59-65). It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Hussey, Gaytan, and Leatherbury because Leatherbury's multiplexing of the data streams would enhance the performance of Hussey-Gaytan system by maintaining the integrity of each data stream on the output channel by separating them by time, space or frequency, and/or selecting a specific data stream to output from multiple data streams.

23. As to claims 9, 10, 14, and 26, Leatherbury does not specifically discloses multiplexing that includes a 2:1, 3:1, or 3:2 multiplexer. However, it would have been obvious to one skilled in the art at the time of the invention that using different multiplexing ratios would accommodate destinations need for transmitting streams with different bandwidths.

24. As to claim 11, the claims are rejected for the same reasons as claims 4, 8, 22, and 24 above.

25. As to claims 12 and 18, the claims are rejected for the same reasons as claims 8, 11, 22 and 23 above.

26. As to claim 13, the claim is rejected for the same reasons as claims 1, 4, 5, 6, and 8 above.

27. As to claim 25, the claim is rejected for the same reasons as claims 1, 4, 16, and 17 above.

28. As to claim 28, the claim is rejected for the same reasons as claims 1, 4, 16, 17, and 25 above.

29. As to claim 29, the claim is rejected for the same reasons as claims 1, 4, 16, 17, 25 and 28 above. Moreover, it would have been obvious to one skilled in the art at the time of the invention that multiplexing before or after data packing is a design decision that may or may not affect the performance of the system depending on its usage.

30. Claims 22, 23, 27, 30, and 31 are rejected under 35 U.S.C. 103(a) as being obvious over Hussey et al. (US 2001/0049744), hereafter "Hussey" in view of Gaytan et al. (US 5,638,367), hereafter "Gaytan" and Muller et al. (US 6,480,489), hereafter "Muller" as applied to claims 5-7, 15, and 19-21 above and further in view of Leatherbury et al. (US 6,763,025), hereafter "Leatherbury".

31. As to claim 22, the claim is rejected for the same reasons as claims 4, 5, 8, 15, and 17 above.

32. As to claim 23, the claims are rejected for the same reasons as claims 4, 8, 22, and 24 above.

33. As to claim 27, the claims are rejected for the same reasons as claims 4, 5, 8, 15, 19 above.

34. As to claim 30, the claim is rejected for the same reasons as claims 1, 4, 5, 8, 15, 16, 17, 19, 25, 28, and 29 above. In addition, Hussey discloses a switching fabric ([0027]); and a plurality of packet processors connected to the switching fabric (Fig. 3).

35. As to claim 31, the claim is rejected for the same reasons as claims 1, 4, 5, 8, 15, 16, 17, 19, 25, 28, 29 above 30 above.

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sindhu et al. (US 5,905,725) ; Kems et al. (US 6,154,460); Bisher. Jr. et al. (US 2002/0162114) ; Sakazaki et al. (US 5,648,960); Dai (US 5,781,549); and Kovacevic et al. (US 6,763,390).

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nabil M El-Hady whose telephone number is (703) 308-7990. The examiner can normally be reached on 9:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 20, 2004

Nabil El-Hady, Ph.D, M.B.A.
Primary Patent Examiner
Art Unit 2154